**All** of the distortion values above are in excess of the 5% value permitted by Commission rules for single-channel modulation. Even though the rules do not specifically require measurement of one channel's distortion in the presence of modulation of the opposite channel, the distortion is still audible under program conditions, which very frequently exercise this modulation condition. The audible characteristic of this distortion manifests itself as a "crackling" or "popping" sound at modulation peaks.

## CONCLUSIONS REGARDING MOTOROLA TECHNICAL FLAWS

1. The Motorola system occupies excessive bandwidth and causes interference to adjacent channels.

2. The Motorola system has high stereo distortion in the presence of high negative envelope modulation.

## HARRIS COMPATIBILITY

In footnote #7 the NPRM invites comment on the compatibility of the Harris system with Motorola system receivers, and whether the Commission should permit stations using the Harris system to do so indefinitely.

If Motorola were selected as the standard, then it would be in the public interest to allow Harris system broadcasts to continue. The extensive field experience has amply demonstrated this compatibility, it would be advantageous to continue to allow the Harris system to be used because it would encourage the development of synchronous detection receivers.

## CONCLUSION

The last eleven years have amply demonstrated the consummate failure of the Motorola system in almost every possible way. It is difficult to argue with the dismal performance of the Motorola system: only a small minority of Motorola AM stereo stations are on the air, and receivers are almost impossible to find anywhere other than in some US made cars.

AM broadcasters need a *technically superior* AM stereo system to compete with FM, CDs, cassette tapes, and digital audio broadcasting.

Linear independent sideband combines the advantages of the Harris and Kahn systems (the broadcasters' favorites), without sacrificing any of the unique advantages of either system.

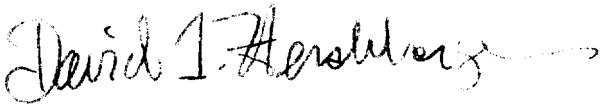
The cost to convert existing stations to linear ISB stereo would be minimal; existing Motorola transmission equipment can continue be used.

Existing Motorola receivers can still produce an enjoyable stereo effect when receiving ISB signals.

As it did in revoking the CBS color television standard, the Commission

should select a new, *technically superior* AM stereo system to take us into the next century and to give the AM broadcast industry its best chance yet.

Respectfully submitted,



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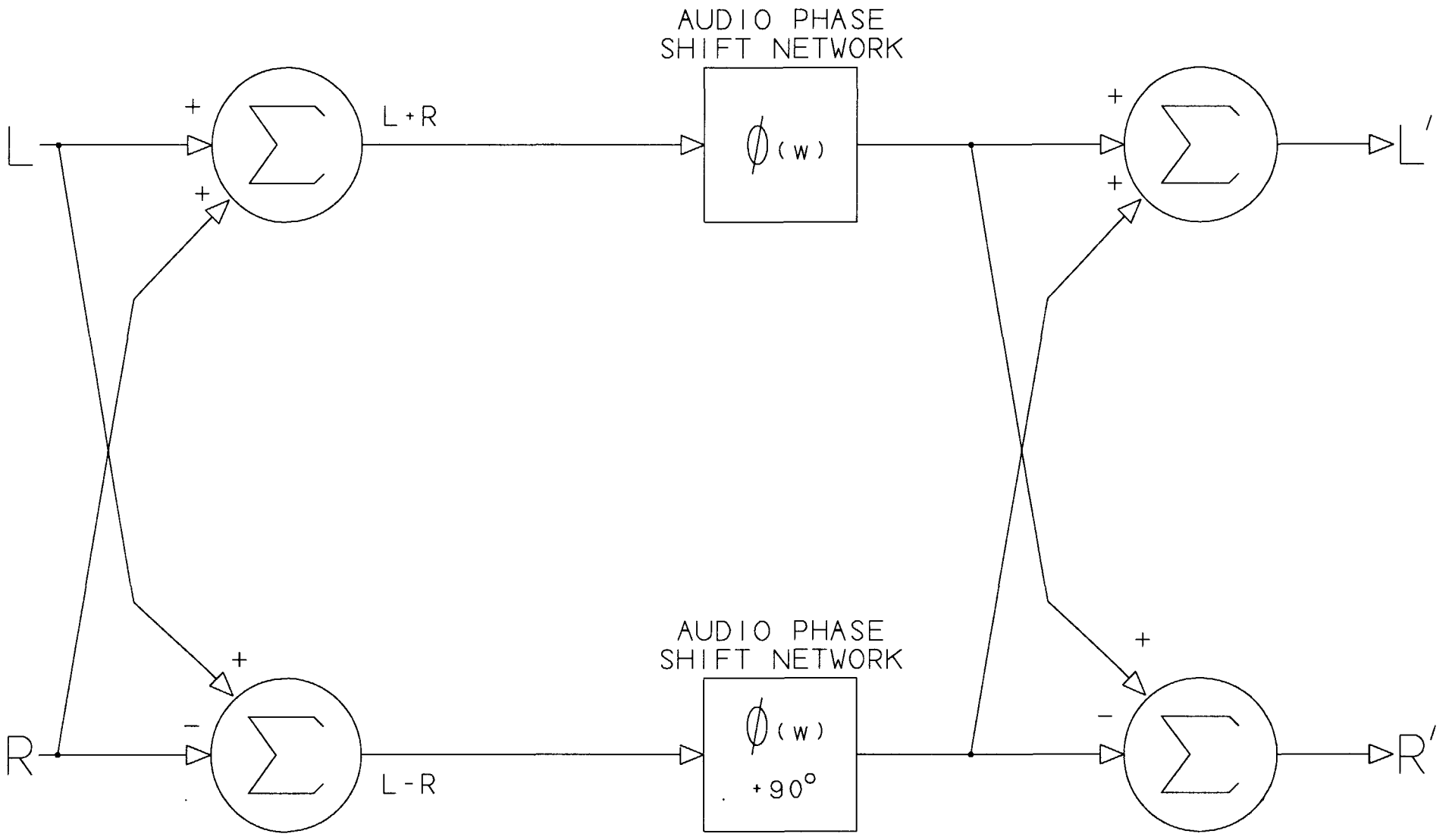
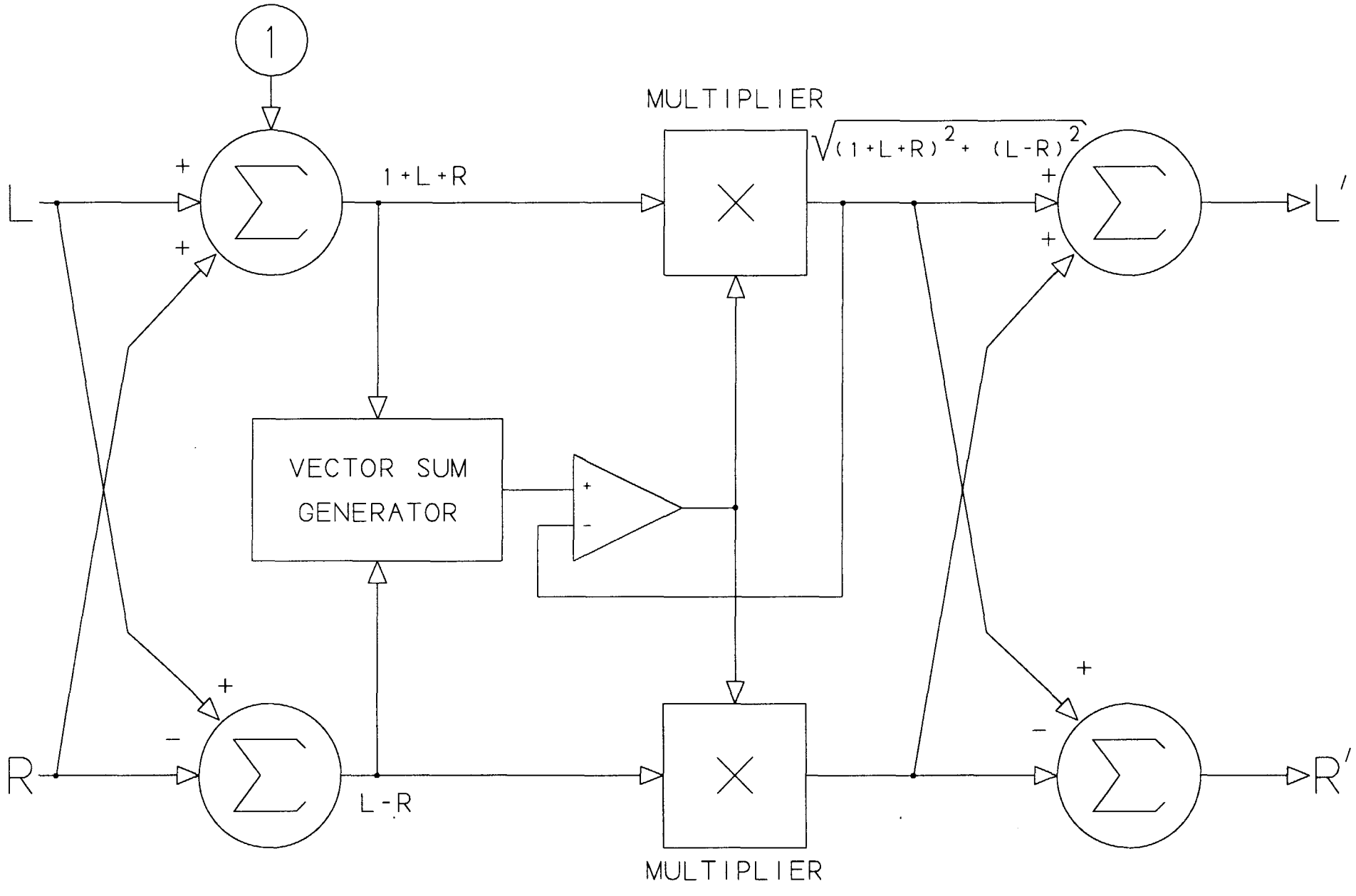
April 2, 1993




# ADAPTOR 1
# CONVERTS QUADRATURE TO ISB




# ADAPTOR 2
# CONVERTS MOTOROLA TO LINEAR QUADRATURE

# Motorola Stereo Distortion

## 40% Left; 60% Right